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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,175	10/14/2003	Adam C. Bennett	GP-304210	3797

7590 03/23/2005

Leslie Hodges  
General Motors Corporation  
Legal Staff, Mail Code: 482-C23-B21  
P.O. Box 300  
Detroit, MI 48265-3000

EXAMINER
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TRAN, DALENA

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.



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10/686,175

EXAMINER
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ART UNIT	PAPER
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20050318

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

<b>Office Action Summary</b>	<b>Application No.</b> 10/686,175	<b>Applicant(s)</b> BENNETT ET AL.	
	<b>Examiner</b> Dalena Tran	<b>Art Unit</b> 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23-27 is/are allowed.
- 6) ☒ Claim(s) 1-6, 14-22 is/are rejected.
- 7) ☒ Claim(s) 7-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

**Notice to Applicant(s)**

1. This application has been examined. Claims 1-27 are pending.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, and 14-22, are rejected under 35 U.S.C.103(a) as being unpatentable over Abe et al. (6,721,637) in view of Frank (5,842,534).

As per claim 1, Abe et al. disclose a method of providing a silent mode of operation for a hybrid electric vehicle having a rechargeable energy storage system (ESS), comprising steps: transmitting a silent mode initiation request to a silent mode controller (see at least columns 6-7, lines 52-3), comparing an actual value of at least one state parameter of the ESS that is indicate of the availability of the ESS for implementing the silent mode to at least one silent mode initiation limit value associated with the actual value, wherein if the actual value of the at least one state parameter compared to the associated at least one mode initiation limit value indicates that the silent mode is allowed, the method proceeds to step (3), and wherein if the actual value of the at least one state parameter indicates that the silent mode is not allowed, step (2) is repeated so long as the silent mode initiation request is being transmitted, and transmitting a silent mode activating request to the silent mode controller (see at least column 7, lines 4-38), operating the vehicle in the silent mode using the silent mode controller, comprising designating

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an electric drive motor as a primary source of propulsion energy for the vehicle and designating an engine as a secondary source of the propulsion energy for the vehicle (see at least column 1, lines 21-54; and column 3, lines 41-59), and terminating the silent mode in response to the occurrence of a mode termination event (see at least column 7, lines 39-52). Abe et al. do not disclose modal quantity of energy is used to make up the difference between the modal quantity of energy and a total vehicle propulsion energy. However, Frank discloses a modal quantity of energy in the ESS is allocated for use by the electric drive motor during the silent mode and the engine is used to make up the difference between the modal quantity of energy and a total vehicle propulsion energy requirement during the silent mode (see at least the abstract; column 3, lines 35-60; columns 5-6, lines 54-10; and columns 6-8, lines 59-11). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Abe et al. by combining modal quantity of energy is used to make up the difference between the modal quantity of energy and a total vehicle propulsion energy to provide appropriate energy power for the vehicle for maximizing range and efficiency while minimizing pollutants.

As per claim 2, Abe et al. disclose step of transmitting a silent mode initiation request is selected from the group consisting of: manual transmitting a silent mode initiation request by a vehicle operator, automatic transmitting of the silent mode initiation request as a function of an absolute position of the vehicle, and automatic transmitting of the silent mode initiation request as a function of a relative position of the vehicle to a region in which silent mode operation of the vehicle is desired (see at least column 5, lines 2-57).

As per claims 3-5, Abe et al. disclose precharging the ESS prior to initiation of a silent mode comprises precharging the ESS to a state of charge (SOC) value that is less than or equal to

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a target precharge SOC limit, and target precharge SOC limit is about 60-75% (see at least columns 3-4, lines 60-34).

As per claim 6, Abe et al. disclose precharging the ESS comprises charging the ESS at a maximum charging power of the vehicle (see at least column 8, lines 5-52).

As per claim 14, Abe et al. disclose the modal quantity of energy allocated for use by the electric drive motor during the silent mode according to an ESS energy budget that is a function of a distance associated with a target zone of silent mode operation (see at least columns 9-10, lines 58-48).

As per claims 15-16, Abe et al. disclose modal quantity of energy comprises a fixed portion of a maximum SOC of the ESS (see at least columns 2-3, lines 58-9; and column 8, lines 5-52).

As per claims 17-18, Abe et al. disclose the ESS energy budget is adjusted as a function of the SOC of the ESS at a predetermined time associated with the silent mode activation request, the predetermined time is the time that silent mode activation request is transmitted (see at least column 5, lines 2-57).

As per claim 19, Abe et al. disclose the mode termination event is selected from group: manual transmitting of a silent mode termination request by a vehicle operator, automatic transmitting of a silent mode termination request as a function of the absolute position of the vehicle, automatic transmitting of a silent mode termination request as a function of the relative position of the vehicle to a region which silent mode operation of the vehicle is desired a manual mode termination command, reaching a predetermined silent mode elapsed time limit, reaching a

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predetermined silent mode elapsed distance limit, and reaching at least one ESS state parameter termination limit (see at least column 5, lines 2-57; and column 11, lines 8-53).

As per claim 20, Abe et al. disclose the termination event comprises reaching at least one ESS state parameter, and wherein the state parameter comprises an ESS temperature (see at least column 8, lines 53-67).

As per claims 21-22, Abe et al. disclose the the termination event comprises reaching at least one ESS state parameter, and wherein the state parameter comprises an SOC limit (see at least columns 3-4, lines 60-34).

4. Claims 7-13, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 23-27 are allowable.

### **Conclusion**

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

. Data et al. (5,606,946)

. Gauthier (6,360,834)

. Severinsky et al. (6,554,088)

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 703-308-8223. The examiner can normally be reached on M-F (7:30 AM-5:30 PM), off every other Friday.

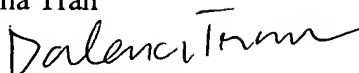
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 703-305-8233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner

Dalena Tran

A handwritten signature in cursive script that reads "Dalena Tran".

March 18, 2005